REMARKS

This is intended as a full and complete response to the Final Office Action dated June 16, 2003, having a shortened statutory period for response set to expire on September 16, 2003. Please enter the following amendments and reconsider the claims pending in the application for reasons discussed below. Claims 1-29 and 89-119 are pending in the application.

In the specification, the paragraphs at page 7, lines 13-22 and at page 17, lines 9-21 have been amended to correct minor editorial issues.

35 U.S.C. §103 Rejections

Claims 1-3, 9, 14, 89-90, 93, 95-96, 98, and 100 are not obvious over *Schwartz et al.* in view of *Uzoh* '030 under 35 U.S.C. §103(a)

Claims 1-3, 9, 14, 89-90, 93, 95-96, 98, and 100 stand rejected under 35 U.S.C. 103(a) as being obvious over *Schwartz et al.* (US patent No. 6,080,288) in view of *Uzoh* (US patent No. 6,066,030, known hereafter as *Uzoh* '030). Claims 1, 89 and 95 are independent claims, and each of claims 2-3, 9, 14, 90, 93, 96, 98 and 100 are dependent on one of the independent claims. Thus, if it be shown that the cited prior art does not teach, show, or suggest the subject matter of claims 1, 89, or 95, claims dependent on such independent claims also distinguish the prior art. The Examiner states that, *Schwartz et al.* teaches a system 10 which includes cell 12 having a first inlet 18 and, a second inlet 20, and fluid outlet 16, and a shaft (conduit 58) connected to the partial enclosure on one end and to an actuator (motor 60) on an opposing end and adapted to rotate the partial enclosure. The Examiner also states that *Schwartz et al.* also teaches a permeable disc (rotatable plate 52) disposed in the partial enclosure and a diffuser plate 30 below the permeable disc 52. The Examiner also states that *Schwartz et al.* fails to teach vertical and lateral movement and *Uzoh* '030 teaches a polishing head that is rotated, vertically moved, and laterally moved and the Examiner states that the motivation to move the polishing head is to increase polishing pressure on the workpiece as stated in column 3, lines 14-18. Applicants respectfully traverse this rejection.

Schwartz et al. discloses a stationery system having a rotary jet planarizer 50 in an electro-forming or galvanic cell. (*See,* Summary of the Invention, column 3, lines 13-15.) The rotary jet planarizer 50 including a rotatable plate 52 made from a plastic, non-conductive material with a main opening 54 and a plurality of apertures 56, and a pipe or conduit 58 coupled to the main opening 54 and extending out of the cell 12. (*See,* column 4, lines 34-44.) The rotary jet planarizer 50 is used to direct the flow of electrolyte 22 in multiple streams and control the electric field between the anode basket 40 and a cathode assembly. A motor 60 is coupled to the rotary jet planarizer 50 through a transmission 61. (*See,* Summary of the Invention, column 3, lines 24-34, column 4, lines 59-67, column 5, lines 18-20 and Figure 1.)

Contrary to the Examiner's statement, Applicants respectfully point out that the motor 60 is coupled to and provided for rotating the rotary jet planarizer 50 inside the stationery cell 12 and only the rotary jet planarizer 50 is rotating. Thus, *Schwartz et al.* does not teach, show, or suggest a rotating partial enclosure since the motor is not coupled to and provided for rotating the cell 12. Therefore, *Schwartz et al.* does not teach, show, or suggest a shaft adapted to rotate the partial enclosure as recited in claim 1, 89, 95 and claims dependent therefrom. In addition, as the Examiner points out, *Schwartz et al.* does not teach, show, or suggest a substrate carrier vertically and laterally movable above the permeable disc as recited in claim 1, 89, 95 and claims dependent therefrom.

Uzoh '030 discloses an apparatus for carrying out chemical mechanical polishing, electroetching, and metal chemical etching. The apparatus of *Uzoh* '030 includes a polishing head 1 capable of rotating (reference number 13) and moving in a vertical and a lateral direction 15, and a substrate support 9 supporting a workpiece or substrate 3 and capable of only rotational movement (reference number 11). (*See,* Figure 1 and column 3, lines 5-18.) Thus, the substrate support of *Uzoh* '030 is capable of rotating, but not vertically and laterally movable. Therefore, *Uzoh* '030 does not teach, show, or suggest a substrate carrier vertically and laterally movable as recited in claims 1, 89, 95 and claims dependent therefrom. Furthermore, nowhere does *Uzoh* '030 teach, show, or suggest a partial enclosure or a shaft adapted to rotate the partial enclosure.

Therefore, *Schwartz et al.* and *Uzoh* '030, alone or in combination, do not teach, show, or suggest the apparatus having a shaft adapted to rotate the partial enclosure and a substrate carrier vertically and laterally movable above the permeable disc as recited in claims 1-3, 9, 14, 89-90, 93, 95-96, 98, and 100. Withdrawal of the rejection is respectfully requested.

Claims 4, 5, 7, and 8 are not obvious over *Schwartz et al.* in view of *Uzoh* '030, and further in view of *Uzoh et al.* under 35 U.S.C. §103(a)

Claims 4, 5, 7, and 8 stand rejected under 35 U.S.C. 103(a) as being obvious over *Schwartz et al.* in view of *Uzoh* '030 as applied to claims above, and further in view of *Uzoh et al.* (US patent No. 6,261,426, known hereafter as *Uzoh* '426). The Examiner states that, *Schwartz et al.* teaches a plurality of openings 33 (holes) on the diffuser 30 (diffuser plate), and *Uzoh* '426 teaches both baffle 8 (diffuser plate) and shield 10 comprised of a non-conductive material such as Teflon (fluoropolymers), PVDF, or polyvinylchloride (plastic). In addition, *Uzoh* '426 teaches a cup 14 (partial enclosure) containing a counterelectrode 4 upheld by a support member 20, and a baffle 8 (diffuser plate) between the counterelectrode 4 and a target substrate 12. The Examiner also states that *Schwartz et al.* and *Uzoh* '030 fail to teach a diffuser plate made of plastic or other materials listed in claim 7, and an anode disposed in the partial enclosure below the diffuser plate. The Examiner further states that the motivation to construct the diffuser plate of *Schwartz et al.* and *Uzoh* '030 with the materials taught by *Uzoh* '426 is that these are non-conductive and will not affect the electrical properties of the plate and thus affect the flow of materials through the plate. Applicants respectfully traverse this rejection.

Schwartz et al. and *Uzoh* '030 are discussed above.

Uzoh '426 discloses an apparatus for electrodeposition or electroetching having a cylindrical cup 14, a baffle 8 and a shield 10. The baffle and the shield of *Uzoh* '426 are composed of a non-conductive material to promote uniformity, particularly at the edge of a substrate. *Uzoh* '426 does not teach, show, or suggest elements lacking in *Schwartz et al.* and *Uzoh* '030 as applied to claim 1 and claims dependent therefrom. Particularly, *Uzoh* '426 does not teach, show, or suggest a rotatable partial enclosure, a

substrate carrier vertically and laterally movable above the permeable disc, or a permeable disc disposed in the partial enclosure, as recited in claim 1 and claims dependent therefrom.

Claims 4, 5, 7, and 8 depend from independent claim 1. Therefore, *Schwartz et al.* in view of *Uzoh* '030, and further in view of *Uzoh* '426, alone or in combination, do not teach, show, or suggest the apparatus as recited in claim 1 and its dependent claims 4, 5, 7, and 8. Withdrawal of the rejection is respectfully requested.

Claims 10, 12-13, 19, 23, 25, 92, and 99 are not obvious over *Schwartz et al.* in view of *Uzoh* '030, and further in view of *Pearson* under 35 U.S.C. §103(a)

Claims 10, 12-13, 19, 23, 25, 92, and 99 stand rejected under 35 U.S.C. 103(a) as being obvious over *Schwartz et al.* in view of *Uzoh* '030 as applied to claims 1-3, 9, 14, 89-90, 93, 95-96, 98, and 100 above, and further in view of *Pearson* (US patent No. 3,763,027). Claims 10 and 12-13 are dependent on independent claim 1, claims 19, 23, and 25 are dependent on independent claim 15, claim 92 is dependent on independent claim 89, and claim 99 is dependent on independent claim 95. These independent claims have already been shown to distinguish over *Schwartz et al.* and *Uzoh* '030, both of them fail to teach, show, or suggest a shaft adapted to rotate the partial enclosure and a substrate carrier vertically and laterally movable above the permeable disc, as recited in claims 1, 15, 89, and 95, and cannot be served to combine with reference as basis for rejection for claims 10, 12-13, 19, 23, 25, 92, and 99, which are dependent from claims 1, 15, 89, and 95. Regarding claim 19, the Examiner states that, *Schwartz et al.* and *Uzoh* '030 both fail to teach the anode below the diffuser plate and *Pearson* teaches the anodes 32 and 33 below diffuser plate 12. The Examiner further states that the motivation to orient the anode below the diffuser plate is to allow the anode to enhance the electroplating process by providing a better control of the fluid flow. Applicants respectfully traverse this rejection. Applicants respectfully traverse this rejection.

Schwartz et al. and *Uzoh* '030 are discussed above.

Pearson discloses a stationery apparatus for electroplating two small circular regions 11a and 11b of a stationery mounted workpiece 10. (*See,* Figure 2 and column

2, lines 20-27.) The apparatus includes a stationery tank 13 and a sparger 12. The sparger 12 is formed from five plates 23, 24, 25, 26, and 27 forming four fluid receiving chambers 28, 29, 30, and 31, and anodes 32 and 33 are embedded in the sparger 12. (*See,* Figure 1 and column 2, lines 25-47.) The anodes 32 and 33 extend from the bottom plate 23 through the second, third, and fourth plates 24, 25, and 26, respectively, using holes 34, 36 on plate 24, holes 41, 42 on plate 25, holes 48, 49 on plate 26. (*See,* Figure 3, column 2, lines 48-68, and column 3, lines 1-7.) The plate 25 having four scallops 43, 44, 46, 47 is provided to block fluid streams flowing through holes 37, 38, 39, 40 from plate 24, acting as a baffle, and to direct fluid flowing through scallops 43, 44, 46, and 47.

Using the Examiner's analogy to regard the plate 24 as a membrane 24, the plate 25 as a permeable disk 25, and the sparger 12 as a diffuser plate 12, Applicants respectfully point out that plates 24 and 25 (a membrane and a permeable disk) of *Pearson* are portions of the sparger 12 (diffuser plate). Thus, *Pearson* does not teach, show, or suggest a diffuser plate positioned below the permeable plate as recited in claims 1 and claims dependent therefrom. In addition, two anodes 32 and 33 of *Pearson* are extending through the plates 24 and 25 (a membrane and a permeable disk.) Thus, *Pearson* does not teach, show, or suggest a permeable disk supported at a distance spaced from the electrode as recited in claims 89 and claims dependent therefrom.

Furthermore, there is no shaft connected to the tank 13 and adapted to rotate the tank 13. Thus, *Pearson* does not teach, show, or suggest a shaft adapted to rotate the partial enclosure, as recited in claims 1, 15, 89, and 95. Additionally, *Pearson* does not teach, show, or suggest a substrate carrier vertically and laterally movable above the permeable disc, as recited in claims 1, 15, 89, and 95. Thus, *Pearson* does not teach, show, or suggest elements lacking in *Schwartz et al.* and *Uzoh* '030 as applied to claims 1, 15, 89, and 95.

Therefore, *Schwartz et al.*, *Uzoh* '030, and *Pearson*, individually or in combination, do not teach, show, or suggest the apparatus as recited in claims 1, 15, 89, and 95, and claims dependent therefrom. Claims 10, 12-13, 19, 23, 25, 92, and 99, dependent from claims 1, 15, 89, and 95, are in condition for allowance. Withdrawal of the rejection is respectfully requested.

Claims 15-17, 22, 26, 28-29, 94, 101-110, 112, and 114-119 are not obvious over *Schwartz et al.* and *Uzoh* '030, and further in view of *Cheung et al.* under 35 U.S.C. §103(a)

Claims 15-17, 22, 26, 28-29, 94, 101-110, 112, and 114-119 stand rejected under 35 U.S.C. 103(a) as being obvious over *Schwartz et al.* and *Uzoh* '030 as applied to claims 1-3, 9, 14, 89-90, 93, 95, 96, 98, 100 above, in further view of *Cheung et al.* (US patent No. 6,258,223). Regarding claim 15, the Examiner states that, *Schwartz et al.* and *Uzoh* '030 both fail to teach multiple processing stations and *Cheung et al.* illustrates in Figure 3 an electroplating system platform 200 having a loading station 210, a plurality of processing stations 218, one or more processing cells 240, a substrate orientor 230, and in Figure 6 an electroplating process cell 400, a substrate holder assembly 450, a process kit 420, a bowl 430, a container body 472, an anode assembly 474, and a filter 476. The Examiner states further that the container body 472 of *Cheung et al.* is preferably comprised of an electrically insulative material, such as ceramics, plastics, acrylic, lexane, PVC, CPVC, and PVDF, and the motivation to utilize the apparatus of *Schwartz et al.* and *Uzoh* '030 in the multichamber stations of *Cheung et al.* is to provide faster throughput and a means of processing many substrates at once.

Regarding claim 16, the Examiner states that, *Schwartz et al.* and *Uzoh* '030 both fail to teach an inlet above the permeable disk to deliver a fluid onto the permeable disk.

Regarding claim 17, the Examiner states that, *Schwartz et al.* and *Uzoh* '030 both fail to teach the first inlet is disposed in a portion of the shaft.

Regarding claim 22, the Examiner states that, *Schwartz et al.* teaches that the permeable disk comprises a plurality of aperture 56 (pores).

Regarding claim 23, the Examiner states that, *Schwartz et al.* and *Uzoh* '030 both fail to teach a permeable disk comprises grooves.

Regarding claim 26, the Examiner states that, *Schwartz et al.* teaches the planarizer 50 which is coupled to actuator 60 (motor) and causes circular rotation between the substrate and the permeable disk.

Regarding claims 28 and 29, the Examiner states that *Cheung et al.* teaches a multistation process apparatus capable of polishing conductive or dielectric materials.

Regarding claim 94, the Examiner states that, *Schwartz et al.* and *Uzoh* '030 both fail to teach a substrate movable between processing positions and *Cheung et al.* teaches a substrate carrier (robot, not shown) transferring the substrate to various processing cells between a plurality of processing positions. The Examiner further states that the motivation to provide the substrate carrier to a multichamber system is to provide for transport of the substrate with decreased contamination from the atmosphere.

Regarding claims 101 and 115-119, the Examiner states that, *Schwartz et al.* teaches a system 10 and a permeable disc (rotatable plate 52) disposed in the partial enclosure. The Examiner also states that *Schwartz et al.* fails to teach vertical and lateral movement and *Uzoh* '030 teaches a polishing head that is rotated, vertically moved, and laterally moved and the Examiner further states that the motivation to move the polishing head is to increase polishing pressure on the workpiece as stated in column 3, lines 14-18.

Regarding claim 102, the Examiner states that, *Schwartz et al.* and *Uzoh* '030 both fail to teach multiple processing stations, a loading station, and a substrate transfer device. The Examiner also stated that *Cheung et al.* illustrates an electroplating system platform 200 to provide faster throughput and a means of processing many substrates at once.

Regarding claim 103, the Examiner states that, *Schwartz et al.* teaches a planarizer 50 which is coupled to actuator 60 (motor) and causes circular rotation between the substrate and the permeable disk.

Regarding claim 104, the Examiner states that, *Schwartz et al.* and *Uzoh* '030 both fail to teach a polishing station and *Cheung et al.* teaches an electroplating system platform 200 comprises processing stations 218 and capable of comprising a polishing apparatus to polish materials from substrate surfaces. The Examiner also stated that, a polishing apparatus is an art recognized processing means in the design of multichamber systems, and it would have been obvious for one of ordinary skill in the

art at the time of the claimed invention to provide a processing station capable of polishing a substrate surface.

Regarding claim 105, the Examiner states that, *Schwartz et al.* and *Uzoh* '030 both fail to teach a substrate held by a substrate carrier between a first and second processing position and *Cheung et al.* teaches a substrate carrier (robot, not shown) transferring the substrate to various processing cells between a plurality of processing positions. The Examiner further states that the motivation to provide the substrate carrier to a multichamber system is to provide for transport of the substrate with decreased contamination from the atmosphere.

Regarding claim 106, the Examiner states that, *Cheung et al.* teaches a plurality of processing stations.

Regarding claim 107, the Examiner states that, *Cheung et al.* teaches a plurality of processing stations capable of performing deposition and planarizing and prior art cited by *Cheung et al.* introduces a multichamber system wherein a deposition and planarizing apparatuses are art recognized processing means in the design of multichamber systems.

Regarding claims 108 and 109, the Examiner states that neither *Schwartz et al.*, *Uzoh* '030, nor *Cheung et al.* discusses the proximity of the substrate to the permeable disk, nevertheless the distance between the substrate and the treating means is an optimizable process parameter. The Examiner further states that it would have been obvious to ensure that the substrate is an ample distance from or to the treating means to ensure the desired process result.

Regarding claims 110 and 112, the Examiner states that, *Schwartz et al.* teaches a diffuser plate 30 disposed in the partial enclosure and is below the permeable disk 52.

Regarding claim 114, the Examiner states that, *Schwartz et al.* teaches the planarizer 50 which is coupled to actuator 60 (motor) and causes circular rotation between the substrate and the permeable disk.

Applicants respectfully traverse this rejection on grounds that the references cited by the Examiner do not teach, show, or suggest a processing system as recited in independent claims 15, 102, 115, 116, 117, 118, 119, and claims dependent therefrom,

nor an apparatus as recited in independent claims 89, 101, and claims dependent therefrom.

Schwartz et al. and *Uzoh* '030 are discussed above and both fail to teach, show, or suggest a shaft adapted to rotate the partial enclosure, and a substrate carrier vertically and laterally movable above the permeable disc as recited in independent claims 15, 89, 101, 102, 115, 116, 117, 118, 119, and claims dependent therefrom.

Cheung et al. discloses an electroplating system 200 having multiple processing stations including a loading station 210, a spin-rinse-dry module 212, and multiple electroplating processing stations 218 having multiple process cells 240. (*See,* Summary, Figures 3 and 4, column 6, lines 32-65.) Inside each stationery processing cell, *Cheung et al.* discloses a rotating substrate holder assembly. However, each processing cell of *Cheung et al.* is not rotating. Therefore, *Cheung et al.* does not teach, show, or suggest elements lacking in *Schwartz et al.* and *Uzoh* '030 with regard to independent claims 15, 89, 101, 102, 115, 116, 117, 118, 119, and claims dependent therefrom. Nowhere does *Cheung et al.* disclose a shaft adapted to rotate the partial enclosure as recited in independent claims 15, 89, 101, 102, 115, 116, 117, 118, 119, and claims dependent therefrom.

In addition, regarding to the Examiner's statement for claim 107, Applicants respectfully point out that *Cheung et al.* also discloses an apparatus 100 and method for using ionized metal plasma (IMP) deposition process to create a seed layer prior to an electroless deposition process using the electroplating system 200 (*See,* column 4, lines 59-67, and column 5, lines 1-11), and the electroplating system 200 of *Cheung et al.* can further includes rapid thermal anneal (RTA) chambers 211 to enhance electroplating results, such as the properties of deposited materials. (*See,* column 7, lines 48-64.) However, nowhere does *Cheung et al.* disclose a multichamber system capable of comprising a polishing apparatus for planarizing a substrate.

Thus, *Schwartz et al.*, *Uzoh* '030, and *Cheung et al.*, individually or in combination, do not teach, show, or suggest a shaft adapted to rotate the partial enclosure as recited in as recited in independent claims 15, 89, 101, 102, 115, 116, 117, 118, 119, and claims dependent therefrom. Claims 15-17, 22, 26, 28-29, 94, 101-110,

112, and 114-119 are in condition for allowance and withdrawal of the rejection is respectfully requested.

Claims 6, 11, 20, 24, 91, 95, and 97 are not obvious over *Schwartz et al.* in view of *Uzoh* '030, and further in view of *Talieh* under 35 U.S.C. §103(a)

Claims 6, 11, 20, 24, 91, 95, and 97 stand rejected under 35 U.S.C. 103(a) as being obvious over *Schwartz et al.* in view of *Uzoh* '030 as applied to claims 1-3, 9, 14, 89-90, 93, 95-96, 98, and 100 above, in further view of *Talieh* (US patent No. 6,176,992). The Examiner states that *Schwartz et al.* and *Uzoh* '030 both fail to teach the materials of permeable disk and anode and *Talieh et al.* teaches a mechanical pad assembly 12 disposed in a container 20, where the mechanical pad assembly 12 includes an anode plate 30 made of a porous or solid conductive material, and a mechanical pad 32 mounted onto the face of anode plate 30 and made of a nonconductive porous material such as polyurethane. The Examiner also states that the motivation to construct the components of *Schwartz et al.* and *Uzoh* '030 with the materials taught by *Talieh* is that these would not interfere with the desired physical/chemical properties of the process results. Applicants respectfully traverse this rejection.

Schwartz et al. and *Uzoh* '030 are discussed above, as applied to independent claims 1, 15, 89, 95, and both fail to teach, show, or suggest the apparatus having a shaft adapted to rotate the partial enclosure, and a substrate carrier vertically and laterally movable above the permeable disc as recited in independent claims 1, 15, 89, 95, and claims dependent therefrom.

Talieh discloses a method and apparatus for electro-chemical mechanical deposition to deposit conductive materials on a predetermined area of the wafer and prevent accumulation of the conductive materials to areas other than the predetermined area. (*See,* Abstract and column 2, lines 18-29.) *Talieh* also discloses an apparatus 10 having a stationery container 20, where inside the stationery container 20 there may be a plurality of wafer pad assemblies 16 that could be associated with each mechanical pad assembly 12. (*See,* Figure 1A, column 3, lines 60-65.) The mechanical pad assembly 12 includes a rotating anode plate 30 and a mechanical pad 32 that is

mounted onto and rotates together with the anode plate 30 around a first axis 14 using a conventional motorized spindle 36. (*See,* Figure 1A, column 3, lines 51-65, and column 4, lines 25-51.) The mechanical pad assembly 12 also includes a rotating wafer head assembly 16 holding a wafer and rotating around a second axis 18 using a conventional motorized spindle 38. (*See,* Figure 1A, column 3, lines 51-65, and column 4, lines 46-51.) Thus, the container 20 (partial enclosure) of *Talieh* is not rotating, and *Talieh* is silent as to the wafer head assembly being vertically and laterally movable. *Talieh* fails to teach, show, or suggest the apparatus having a shaft adapted to rotate the partial enclosure, and a substrate carrier vertically and laterally movable above the permeable disc as recited in independent claims 1, 15, 89, 95, and claims dependent therefrom. Claims 6, 11, 20, 24, 91, 95, and 97 depend from claims 1, 15, 89, and 95, and nowhere does *Talieh* teach, show, or suggest elements lacking in *Schwartz et al.* and *Uzoh* '030 as applied to independent claims 1, 15, 89, 95. Furthermore, *Talieh et al.* does not teach, show, or suggest a diffuser plate as recited in claim 1 and claims dependent therefrom and there is no motivation shown or suggested in references to combine the teachings.

Therefore, claims 6, 11, 20, 24, 91, 95, and 97 are in condition for allowance. Withdrawal of the rejection is respectfully requested.

Claims 18, 21, and 27 are not obvious over *Schwartz et al.* and *Uzoh* '030, and in further view of *Cheung et al.* under 35 U.S.C. §103(a)

Claims 18, 21 and 27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Schwartz et al.* and *Uzoh* '030, in further view of *Cheung et al.* The teachings of *Schwartz et al.*, *Uzoh* '030, and *Cheung et al.* have been described above.

Applicants respectfully traverse this rejection on ground that none of the references cited by the Examiner teach, show, or suggest the processing system as recited in claim 15 and claims dependent therefrom. As discussed above, *Schwartz et al.*, *Uzoh* '030, and *Cheung et al.*, individually or in combination, do not teach, show, or suggest a shaft adapted to rotate the partial enclosure. Therefore, claims 18, 21 and 27, dependent from claim 15 are in condition for allowance. Withdrawal of the rejection is respectfully requested.

Claim 111 is not obvious over *Schwartz et al.* and *Uzoh* '030, in view of *Cheung et al.* and further in view of *Talieh* under 35 U.S.C. §103(a)

Claim 111 stands rejected under 35 U.S.C. 103(a) as being obvious over *Schwartz et al.* and *Uzoh* '030 in view of *Cheung et al.* as applied to claims 15-17, 22, 26, 28-29, 101-110, 112, and 114-119 above, in further view of *Talieh*. The Examiner states that *Schwartz et al.*, *Uzoh* '030, and *Cheung et al.* all fail to disclose the materials of the permeable disk or anode, and *Talieh et al.* teaches a mechanical pad 32 mounted onto the face of an anode plate 30 and made of a nonconductive porous material. The Examiner also states that the motivation to construct the components of *Schwartz et al.* and *Uzoh* '030 with the materials taught by *Talieh* is that polyurethane is inert and will not interfere with the desired physical/chemical properties of the process results.

Applicants respectfully traverse this rejection. The teachings of *Schwartz et al.* *Schwartz et al.*, *Uzoh* '030, *Cheung et al.*, and *Talieh* have been discussed above. The references, individually or in combination, do not teach, show, or suggest a shaft adapted to rotate the partial enclosure, and a substrate carrier vertically and laterally movable above the permeable disc as recited in independent claim 102 and claims dependent therefrom.

Therefore, claim 111, dependent from claim 102, is in condition for allowance. Withdrawal of the rejection is respectfully requested.

Claim 113 is not obvious over *Schwartz et al.* and *Uzoh* '030, in view of *Cheung et al.* and further in view of *Pearson* under 35 U.S.C. §103(a)

Claim 113 stands rejected under 35 U.S.C. 103(a) as being obvious over *Schwartz et al.* and *Uzoh* '030 in view of *Cheung et al.* as applied to claims 15-17, 22, 26, 28-29, 101-110, 112, and 114-119 above, in further view of *Pearson*. The Examiner states that *Schwartz et al.*, *Uzoh* '030, and *Cheung et al.* all fail to teach a membrane disposed between the anode and the permeable disk, and *Pearson* teaches a membrane 24 disposed between the anode 32, 33 and the permeable disk (plate 25). The Examiner also states that the motivation to provide a membrane disposed between

the anode and the permeable disk is to provide additional fluid flow control and an uniform amount of electrolyte per unit area across the substrate. Applicants respectfully traverse this rejection.

The teachings of *Schwartz et al.*, *Uzoh* '030, *Cheung et al.*, and *Pearson* have been discussed above. The references, individually or in combination, do not teach, show, or suggest a shaft adapted to rotate the partial enclosure, and a substrate carrier vertically and laterally movable above the permeable disc as recited in independent claim 102 and claims dependent therefrom.

Therefore, claim 113, dependent from claim 102, is in condition for allowance. Withdrawal of the rejection is respectfully requested.

In conclusion, the references cited by the Examiner, neither alone nor in combination, teach, show, or suggest the claimed aspects of the invention. Having addressed all issues set out in the office action, applicants respectfully submit that the pending claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,

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